

The listing of claims presented below replaces all prior versions and listing of claims in the application.

Listing of Claims:

1. (Currently Amended) ~~A recombinant gene medicine of adenovirus vector and p53 gene for treating proliferative disease, wherein it is constructed by adenovirus vector and human tumor suppressor p53 gene expression cassette, and its recombinant sequence is:~~

the right end of adenovirus 5

ATGTTTACCGCCACACTCGCAGGGTCTGCACCTGGTGCGGGTCTCATCGTACCT  
CAGCACCTTCCAGATC<sub>70</sub>TCTGACATGCGATGTCGACTCGACTGCTTCGCGATGT  
ACGGGCCAGATATAACGCGTATCTGAGGGGACTAGGGTGTGTTTAGGCGAAAAG  
CGGGGCTTCGGTTGTACGCGGTTAGGAGTCCCCTCAGGATATAGTAGTTTCGCT  
TTTGCATAGGGAGGGGGGAAATGTAGTCTTATGCAATACTCTTGTAGTCTTGCAA  
CATGGTAACGATGAGTTAGCAACATGCCTTACAAGGAGAGAGAAAAAGCACCCGTG  
CATGCCGATTGGTGGAAGTAAGGTGGTACGATCGTGCCTTATTAGGAAGGCAA  
CAGACGGGTCTGACATGGATTGGACGAACCACTGAATTCCGCATTGCAGAGAT  
ATTGTATTTAAGTGCCTAGCTCGATACAATAAACGCCATTTGACCATTCAACCAC  
ATTGGTGTGCACCTCCAAGCTTGGTACCGAGCTCGGATCCCG<sub>523</sub>CTAGAGCCAC  
CGTCCAGGGAGCAGGTAGCTGCTGGGCTCCGGGGACACTTTGCGTTCGGGGCTG  
GGAGCGTCTTTCCACGACGGTGACACGCTTCCCTGGATTGGCAGCCAGACTGCT  
TTCCGGGTCACCTGCC<sub>655</sub>ATGGAGGAGCCGCAGTCAGATCCTAGCGTCGAGCCCC  
CTCTGAGTCAGGAAACATTTTCAGACCTATGGAACTACTTCCTGAAAACAACG  
TTCTGTCCCCCTTGCCGTCCCAAGCAATGGATGATTTGATGCTGTCCCCGGACG  
ATATTGAACAATGGTTCACCTGAAGACCCAGGTCCAGATGAAGCTCCAGAAATG  
CCAGAGGCTGCTCCCCCGTGGCCCCCTGCACCAGCAGCTCCTACACCGGGGGG  
CCCTGCACCAGCCCCCTCCTGGCCCCCTGTCATCTTCTGTCCCTTCCCAGAAAAC  
CTACCAGGGCAGCTACGGTTTCCGTCTGGGCTTCTTGCAATTCTGGGACAGCCAA  
GTCTGTGACTTGACAGTACTCCCCTGCCCTCAACAAGATGTTTTGCCAACTGGG  
CAAGACCTGCCCTGTGCAGCTGTGGGTTGATTCCACACCCCCCGCCGGCACCCG  
CGTCCGCGCCATGGCCATCTACAAGCAGTCACAGCACATGACGGAGGTTGTGA

GGCGCTGCCCCCACCATGAGCGCTGCTCAGATAGCGATGGTCTGGCCCCCTCCTC  
AGCATCTTATCCGAGTGGAAGGAAATTTGCGTGTGGAGTATTTGGATGACAGA  
AACACTTTTTCGACATAGTGTGGTGGTGGCCCTATGAGCCGCCCTGAGGTTGGCTCT  
GACTGTACCACCATCCACTACAACTACATGTGTAACAGTTCCTGCATGGGCGGG  
ATGAACCGGAGGGCCCATCCTCACCATCATCACACTGGAAGACTCCAGTGGTAA  
TCTACTGGGACGGAACAGCTTTGAGGTGCGTGTTTGTGCCTGTCTCTGGGAGAGA  
CCGGCGCACAGAGGAAGAGAATCTCCGCAAGAAAGGGGAGCCTCACCACGAG  
CTGCCCCCAGGGAGCACTAAGCGAGCACTGCCCCAACAACACCAGCTCCTCTCC  
CCAGCCAAAGAAGAAACCACTGGATGGAGAATATTTCAACCCTTCAGATCCGTG  
GGCGTGAGCGCTTCGAGATGTTCCGAGAGCTGAATGAGGCCTTGGAACCTCAAG  
GATGCCCAGGCTGGGAAGGAGCCAGGGGGGAGCAGGGGCTCACTCCAGCCACCT  
GAAGTCCAAAAAGGGTCAGTCTACCTCCCGCCATAAAAAACTCATGTTCAAGA  
CAGAAGGGCCTGACTCAGACTGA<sub>1837</sub>CATTCTCCACTTCTTGTTCCCCACTGACA  
GCCTCCCACCCCCATCTCTCCCTCCCTGCCATTTTGGGTTTTGGGTCTTTGAAG  
CCTTGCTTGCAATAGGTGTGCGTCAGAAGCACCCAGGACTTCCATTTGCTTTGT  
CCCCGGGGCTCCACTGAACAAGTTGGCCTGCACTGGTGTTTTTGTGTTGGGGAGGA  
GGATGGGGAGTAGGACATAACCAGCTTAGATTTTAAGGTTTTTACTGTGAGGGAT  
GTTTGGGAGATGTAAGAAATGTTCTTGCAGTTAAGGGTTAGTTTACAATCAGCC  
ACATTCTAGGTAGGGGGCCACTTCACCGTACTAACCAGGGAAGCTGTCCCTCACT  
GTTGAATTTTCTCTAACTTCAAGGCCCATATCTGTGAAATGCTGGATTTGCCCTA  
CCTCGGAATGCTGGCATTTFGCACCTACCTCACAGAGTGCATTGTGAGGGTT<sub>2297</sub>A  
ATGAAATAATGTACATCTGGCCTTGAAACCACCTTTTATTACATGGGGTCTAGC  
GGGATCCACTAGTAACGCCGCCAGTGTGCTGGAATTCTGCAGATATCCATCACA  
CTGGCGGGCCGCTCGAGCATGCATCTAGAGCTCGCTGATCAGCCTCGACTGTGCC  
TTCTAGTTGCCAGCCATCTGTTGTTTGGCCCTCCCCCGTGCCTTCCTTGACCCTG  
GAAGGTGCCACTCCCCTGTCTTTTCTAATAAAAATGAGGAAATTGCATCGCAT  
TGTCTGAGTAGGTGTCATTCTATTCTGGGGGGTGGGGTGGGGCAGGACAGCAA  
GGGGGAGGATTGGGAAGACAATAGCAGGCATGCTGGGGATGCGGTGGGCTCTA  
TGGCTTCTGAGGCGGAAAGAACCAGCTGGGGGCTCGAGGGGGGATCCCCACGCTA  
GAGCT<sub>2733</sub>GACTATAATAATAAAACGCCAACTTTGACCCGGAACGCGGAAAAACA

CCTGAGAAAAACACCTGGGCGAGTCTCCACGTAAACGGTCAAAGTCCCCGCGG  
CCCTAGACAAATATTA<sub>2848</sub>—the left end of adenovirus 5;

wherein:

- 1) ~~the right end of adenovirus 5 and the left end of adenovirus 5 are described in the full sequence of adenovirus 5 (Genbank No: NC\_001406)~~
  - 2) ~~1-70: the right arm of adenovirus (the 70<sup>th</sup> base locates at adenovirus gene sequence 3328)~~
  - 3) ~~71-523: Rous Sarcoma Virus (RSV) LTR (promoter)~~
  - 4) ~~524-655: 5' end non-translating region~~
  - 5) ~~656-1837: p53 gene coding sequence~~
  - 6) ~~1838-2733: 3' end non-translating region (poly Adenosine tail starting at 2298)~~
- ~~2734-2848: the left arm of adenovirus (base at 2734 is positioned at 452 of adenovirus 5 gene sequence)~~ An application of a recombinant of adenovirus vector and human tumor suppressor p53 gene expression cassette for producing the medicine for treating proliferative disease.

2. (Currently Amended) The ~~recombinant gene medicine application~~ according to Claim 1, wherein the adenovirus vector and human tumor suppressor p53 gene expression cassette of the recombinant is a specific sequence composed of promoter-p53cDNA-poly adenosine.

3. (Currently Amended) The ~~recombinant gene medicine application~~ according to claim 2, wherein the upstream of the gene expression cassette is any eukaryotic cell promoters, prokaryotic cell promoters or virus promoters, and the downstream is any of the eukaryotic gene poly adenosine residues (Poly A tail).

4. (Currently Amended) The ~~recombinant gene medicine application~~ according to claim 1, wherein the recombinant gene medicine is obtained in prokaryotic cells by homologous recombination, including:

- 1) the recombinant pGT-2 is obtained by homologous recombination of adenovirus and plasmid pGT-1 (containing two inverted terminal repeats on both ends of adenovirus) in ~~E.~~

~~*coli*~~ prokaryotic cells;

2) the recombinant pGT-3 is obtained by homologous recombination of pGT-2 and artificial sequence “the right arm of adenovirus/ promoter-p53cDNA-poly A / the left arm of adenovirus ” in ~~*E. coli*~~ prokaryotic cells;

3) The recombinant p53 adenovirus is obtained by discarding the prokaryotic sequence using endonuclease *PacI*.

5. (Currently Amended) ~~The recombinant gene medicine according to claim 4, wherein the recombinant gene medicine is obtained in any prokaryotic cells by homologous recombination~~ The application according to claim 4, wherein the prokaryotic cell is *E. coli*.

6. (Currently Amended) ~~The recombinant gene medicine according to claim 1 is used to produce injection solution~~ The application according to claim 1, wherein the proliferative disease is any kind of scar.

7. (Currently Amended) ~~The recombinant gene medicine according to claim 6 is used to produce injection~~ The application according to claim 6, wherein the scar is pathological scar.

8. (New) The application according to claim 7, wherein the pathological scar is cheloid.

9. (New) The application according to claim 1, wherein the recombinant is used to produce injection solution.